ABSTRACT

An optical device for coupling the luminous output of a light-emitting diode (LED) to a predominantly spherical pattern comprises a transfer section that receives the LED's light within it and an ejector positioned adjacent the transfer section to receive light from the transfer section and spread the light generally spherically. A base of the transfer section is optically aligned and/or coupled to the LED so that the LED's light enters the transfer section. The transfer section can comprises a compound elliptic concentrator operating via total internal reflection. The ejector section can have a variety of shapes, and can have diffusive features on its surface as well. The transfer section can in some implementations be polygonal, V-grooved, faceted and other configurations.